



THE B&O MODELER

Volume 4, Number 4

JULY/ AUGUST 2008



**MODELING B&O'S CLASS B-21 BAGGAGE CARS
PAINTING AND LETTERING B&O PASSENGER CAR MODELS
TURNING THE WEST END INTO THE SHENANDOAH SUBDIVISION - PART 2**

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Cover Photos – Top, B-21 Baggage Car – Bob Chapman photo. Bottom, N&W Crossing – Fran Giacoma photo.

AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost. Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of [annual memberships](#) are available, Regular memberships are only \$35.00. If you would like to join, click [here](#) to fill out our [membership application](#), print a copy and mail it to:

**B&ORRHS
ATTN: Membership
P.O. Box 24068
Baltimore, MD 21227-0568**

FROM THE ASSOCIATE EDITOR

Still Plays with Trains!

Every once in a while, my wife will tease me about, “playing with trains.” I always respond that I don’t play with trains, that my model railroad is a miniature transportation system that I operate to preserve the heritage of the B&O yada, yada, yada. But you know what, that’s just pure, unadulterated bull—I am a model railroader because I like to play with trains. And I bet you are, too.

Now I know a lot of you out there are shaking your heads, and saying, no, I don’t play with trains, I operate my model railroad, and it’s an art form, it requires great skill, yada, yada, yada. But think about it. Why did you become a model railroader? Many people have gotten into the hobby because they were exposed to trains when young either through a

relative who worked for a railroad, or prolonged exposure to the prototype; most model railroaders got their start with toy trains. (For what it's worth, I had no exposure to railroading when young, and my start occurred at Christmas, 1963 when Santa left two HO Scale Mantua-Tyco sets [which were very high quality back then] under the tree.) But when you come right down to it, aren't you a model railroader because you love trains, love to watch them rolling by, love to be able to count the cars in a freight, or identify the different cars in a passenger train?

If you are reading *B&O Modeler*, then you not only like trains, but you have some interest in the B&O. Maybe you model a road that interchanged with the B&O, and want to more accurately represent B&O freight equipment; or maybe, like me, the B&O is your mistress, your secret love with whom you can't spend enough time. Whatever the case, model

railroading, and modeling the B&O should be fun, something you do because you enjoy it, and not because someone is holding a (figurative) gun to your head. Some B&O modelers are content to use RTR equipment that only vaguely resembles the prototype, while others' are compelled to spend months detailing one freight car to the extreme. I suspect most of us fall somewhere in between those extremes, and enjoy modeling the B&O to a reasonable degree of accuracy that fits our needs. For myself, the Tony Koester--Allen McClelland philosophy of "good enough" is, well, good enough. But whatever you skill level, goals, or interest in the B&O, I hope you are having fun, and that you'll share your work with the rest of us here of the pages of *B&O Modeler*.

Greg LaRocca
Ellwood City, PA

NEWS FROM THE COMPANY STORE

BY CRAIG CLOSE

Contacting Company Store Manager: If you have a question or problem with a Company Store order, please send an e-mail message to storemanager@borhs.org. If you do not have e-mail, send to BORHS Store, PO Box 24225, Baltimore, MD 21227.

Reminder on Placing Orders (Domestic U.S.): The use of a credit card is recommended for orders shipped within the U.S. so that correctly calculated shipping amounts are applied to your order. There are several different levels of shipping cost and they are not always handled properly by the web site. If you pay by credit card, Store personnel will endeavor to calculate the charge correctly. If you pay by check, you may be charged too much by the web site calculation unless you know what the charge should be and note it correctly. Your order cost will be adjusted to match your check amount even if you are overpaying. Also, the web site does nothing about BORHS member discounts, which are also applied at differing rates. Similar comments as those preceding for shipping apply to discounts.

Use Credit Card for Foreign Orders: All orders for shipment outside the United States (except APO) must be paid for by VISA or MasterCard. Member discounts and proper postage will be calculated when the order is processed. \$3.00 will be added to the postage to cover handling.

Order Form Generation: The Company Store web site can probably be best described as "clunky". We want to improve it, but it's what you have to use for now. We apologize.

After using the "Add" button for each of the items you want, scroll to the bottom of the left frame and click on "Shopping Cart". The new screen will display a list of your items and a number of information fields to fill in. After entering that information, scroll to the bottom of that screen and click the "Generate Order Form" button. Print the displayed screen, manually fill in credit card data and BORHS membership number as required, and mail as indicated in the following paragraph. None of your information is saved on the web site.

Mailing Your Orders: All orders should be mailed to:

BORHS Store
PO Box 24225
Baltimore, MD 21227.

"BORHS Store" is a simple name, on one line, and gets the job done really simply and easily. There are several different destinations for the mail coming to PO Box 24225 and use of something descriptive is a big help in sorting the mail. Thanks.

Available from the BORHS Company Store:

There is a CD for *The B&O Modeler* which includes all issues of the magazine through 2006. It is item 40201 with a cost of \$10.00 plus shipping.

The Kadee ready-to-run PS-1/M-67a Boxcar models in HO are still available at the Company Store as stock numbers 33141-45 and are \$34.00 each. This is a model of the PS-1 40' boxcar. There are five different cars with three covering the 1964-68 era and two for 1968-80. Those later era cars have ACI labels. The cars were made by Pullman Standard starting in 1956. The B&O leased a number of them in 1964 with class designation of M-67a. They have a single 6' door. These are Kadee quality, ready-to-run models with trucks and couplers. You can order the cars at the Company Store web site, www.borhs.org.

Other boxcar models available are the M-26D/E conversions kits from Speedwitch, stock numbers 33113 and 33114, for \$32 and \$34 respectively. These kits are based upon the included Red Caboose models.

Models in short supply are the cabooses from Pacific Mountain Scale Shop. PMSS has stopped production but their relatively small supply of B&O stock is still available. See the store web site for the Store stock still available in the 32001 to 32019 number range. 32001, 32017 and 32019 are in greater quantity than the others.

Do you need diesels? Check out the list of GP-9's and GP-30's, and other types available.

Recent Items at the Company Store:

10087 New book "Baltimore & Ohio's Capitol Limited and National Limited". \$36.95. An authoritative history of the B&O's glory years, with B&W and color images of route information, motive power details, and the story of streamlining its equipment with innovative and aesthetically striking results. Images of uniforms, dinnerware, stations, period ads and route maps, and interior views of passenger cars.

10089 "Baltimore and Ohio's Magnificent 2-8-8-4 EM-1 Articulated Locomotive", by Dixon & Withers. \$24.95.

10090 "Baltimore and Ohio Railroad in West Virginia", Images of Rail Series, by Bob Withers. \$19.99.

10091 "Tall Pines and Winding Rivers" by Ben Kline, Jr. \$15.

10092 "Baltimore and Ohio's Cincinnati", by Tom Dixon. \$20.95.

10093 "The West Virginia and Pittsburgh Railroad", by Alan Clarke. \$29.95.

10095 "Trackside in the Rust Belt, 1957-77, with Cal Banse", by Stephen M. Timko. \$59.95. Erie RR operator Cal Banse took his camera to work and on excursions in eastern Ohio and western Pennsylvania photographing the railroad scene from the end of steam to the introduction of second generation diesels in a territory known for its heavy industry. A Morning Sun book with 22 pages on the B&O. Includes photos of the EM-1 and Foxburg Bridge.

10096 "B&O - Portrait of the Buffalo Division" by James Mancuso. \$14.00. A collection of railroadiana photos, operational information, and historical description of the Division. 54 book-weight, slick-paper pages, center-stapled.

10098 "Trackside around Eastern Ohio 1965-1995 with Dave McKay", by Stephen Timko. \$59.95. Another Morning Sun pictorial covering a geographic area. Includes 23 color pages of B&O territory in eastern OH; has many photos of B&O equipment.

10100 "Visionary Railroader: Jervis Langdon, Jr", by Roger Grant. \$24.95. Biography of the last president of the independent B&O in the 60's until the C&O merger. He was responsible for B&O innovations and the sunburst scheme.

10101 "Railroad Cites: Jersey City, NJ" by Liljestrand & Sweetland. \$20.00. Photo story of the facilities of multiple railroads in the city, including the B&O.

10102 "Baltimore & Ohio Facilities In Color Volume 1: Eastern Region" by Bob Withers. \$59.95. Stations, towers, shops, roundhouses, and dozens of other structures (many with trains) are examined by B&O authority Bob Withers. This is the first in a three volume examination of the elegant B&O.

22009 New calendar with theme of "Linking 13 Great States with the Nation". \$12.00.

33053 Armstrong Lever set, HO Scale, for model towers. \$25. 16 levers, 4 in reversed position.

34001 Lasercut wood model of a small B&O Station/Office. \$12.98.

34002 thru 34008 Lasercut wood models of various sizes of B&O Towers. \$45 to \$56.

- 40401 VP of Engineering Report 236, Frederick Branch, 1911. \$5.
- 40402 VP of Engineering Report 316, Frederick Branch, 1911. \$5.
- 40403 VP of Engineering Report 330, Toledo Freight Terminal, 1913. \$5.
- 40404 VP of Engineering Report 346, South Branch, 1911. \$5.
- 40405 VP of Engineering Report 811, 26th St Stores, NY, 1914. \$5.
- 40406 VP of Engineering Report 1117, Lake Erie Ore Docks, 1910. \$5.
- 40407 VP of Engineering Report 1122, Potomac Yard Approach Route Proposal, 1922. \$5.
- 40408 VP of Engineering Report 1480, Annual Inspection of Property, 1925. \$5.
- 40409 VP of Engineering Report 1511, Trackage Rights, Anacostia Jct to Long Bridge, 1942. \$5.
- 40410 VP of Engineering Report 1520, Use of Cleveland Union Station, 1934. \$5.
- 40052 DVD "Steam & Diesel on the B&O Vol 2" 1950s Action in Ohio from films by Don Krofta. \$39.95.
- 40041 DVD "Next Stop: Silver Spring" the story of the B&O station in Silver Spring, MD. \$25.
- 71051 System Sketch Map, by the B&O using 1918 data updated to 1945, includes full B&O system with proposed lines plus valuation section data. This map is 23" x 52" and is shipped separately in a 'tube'. \$11.
- 72006 Reprint "B&O Equated Tonnage Ratings - September 1, 1911". \$15. 51 printed pages covering 90 informational pages.
- 72080 Reprint "Alphabetical and Geographical List of Stations in Coal Regions – 1962". \$12. The booklet lists alphabetically in two sections - one by states and the other by regions - the names of mines, their index numbers, regions, districts, assembly points and serving railroad, including other connecting railroads East of the Ohio River as well as the B&O. The booklet, effective December 24, 1962, consists of 34 pages.
- 72081 Reprint "Commodity Index - Alphabetical Listing of Manufacturers, Jobbers, Distributors, etc., Circa 1930s" \$45. This booklet lists industries served by Private Railroad Sidings available directly to the B&O and through Reciprocal Switching. Arranged

by State and City within Product Type showing commodity handled. Published by the Commercial Development Department. The booklet consists of 428 pages.

72082 Reprint "B&O RR - Delivery Circular - Facilities For and Rules Governing Receipt and Delivery of Property, Effective May 3, 1957". \$34. This 322 page document consists of an indexed alphabetical listing of cities served by the B&O RR. Included under the heading for each city is information on the names of companies, their types of business or items handled, and siding location for delivery to that company. Also shown, where cities have them, are specialized equipment to facilitate handling listed types of material (on- and off-loading), such as cranes with their capacity, ramps, livestock chutes and auto platforms. Noted also are locations that handle carload and less-than-carload traffic. Instructions for accommodating deliveries in special situations are set forth. Cities falling within certain switching districts have that information noted. The names of other carriers with which interchange can occur are included. This booklet is chock full of information about the material the B&O handled for its customers.

75163 Summary of Terminal Operations in Selected Eastern Region Yards. 1954. \$16. Covers yards from Brunswick to Wheeling and Pittsburgh. Lists performance figures for the year, personnel assignments, engine/crew assignments, and operations including customers served. Retail \$5.00.

75167 Reprint "B&O Condensed Freight Schedules - November, 1967".

79451 "BORHS Scans from the Archives Volume 1. Diagrams of Selected Buildings." This item is a combination of a reprint booklet and a CD, each having the same title and contents, i.e, the booklet is a hard copy version of the digital images on the CD. Neither the booklet nor the CD is available individually. The diagrams are the result of years of work sorting and digitizing drawings held by the Archives of the B&O Railroad Historical Society. The contents of this product are plan diagrams of 24 selected buildings, including engine houses, roundhouses, towers, stations, freight houses, and other structures. One of the structures is a repair plan for the Thomas Viaduct. \$19.

79452 "BORHS Scans from the Archives Volume 2, Diagrams of Class S-1A 2-10-2 Santa Fe Type Steam Locomotive." This item is a combination of reprint booklet and a CD, each having the same title and

contents, i.e, the booklet is a hard copy version of the digital images on the CD. Neither the booklet nor the CD is available individually. The diagrams are the result of years of work sorting and digitizing drawings held by the Archives of the B&O Railroad Historical Society. The contents of this product are 30 drawings and sketches of the S-1A locomotive. \$18.

79453 "BORHS Scans from the Archives Volume 3. Diagrams of Selected Freight Cars Painting and Lettering Schemes." This item is a combination of a

reprint booklet and a CD, each having the same title and contents, i.e, the booklet is a hard copy version of the digital images on the CD. Neither the booklet nor the CD is available individually. The diagrams are the result of years of work sorting and digitizing drawings held by the Archives of the B&O Railroad Historical Society. The contents of this product are 27 drawings of various classes of box cars, hopper cars, gondola cars, and flat cars. \$18.



Thomas Eckhardt Photograph

UPDATES AND ERRATA

PROTOTYPE RAILS, AN NMRA SANCTIONED EVENT, COCOA BEACH, FL, JANUARY 8-11, 2009.

- * Featuring modular layouts in O, HO and N scales.
- * Over 400 models on display. Please bring your models.
- * Clinicians include: Larry Kline, Richard Hendrickson, Tony Thompson, Bill Darnaby, Mike Rose, Roger Hinman, Mont Switzer, Bruce Smith, Ted Culotta, Tony Koester, Andy Sperandeo, Bob Webber, John Roberts, Bill Schaumburg, Lance Mindheim, Calvin Winter, Alex Conta, Brian Carlson, John Greedy, Lou Ullian, Clark Propst, and John Golden.
- * There will be operating sessions available on Thursday Jan 8 at John Wilkes [863-967-7318] and Mike Brock's [321-453-4140] layouts. Those wishing to join in a session should indicate their choices in preregistration and

make direct contact with the layout owner. Selection will be on a first come basis. Layouts including Lou Ullian's On3 and Dan Zugelter's C&O will be available for visitation on Sunday.

* For early arrivals, there will be a dinner at Durango's in Cocoa Beach Thursday evening Jan 8, at 7PM. We will meet in the Hilton lobby at 6:30. Following the dinner we will return to the hotel for slide shows and clinics.

Hilton Hotel, 1550 N. Atlantic Ave., Cocoa Beach, FL, 1-800-526-2609 or 321-799-0003. \$99 Room Rate. Refer to Prototype Rails. Preregistration \$35, payable to Prototype Rails, to Marty Megregian, 480 Gails Way, Merritt Island, FL 32953.

A special dinner on Saturday, Jan 10, for Prototype Rails attendees only will be available for \$ 20/person. Tickets are required and must be purchased no later than Saturday morning. Tickets may be purchased and reserved in advance and included with the cost of registration. Registration plus dinner is \$55/person. Spouses not attending presentations do not have to register.

For more information contact: Mike Brock at 321-453-4140.

RAILROAD PROTOTYPE MODELERS SEMINAR - EAST, SPONSORED BY DIVISION 2, MCR-NMRA, GREENSBURG, PA., MARCH 27 -28, 2009.

- * A large display room will be available for models. Please bring your models.
- * Layout tours will be available on Sunday, March 29
- * Early Bird operating sessions scheduled for Thursday Evening, 6:00PM, March 26.
- * Limited number of tables available for vendors @ \$20.00 each.
- * Hotel overlooks the Norfolk Southern (PRR) main line
- * Air travel into nearby Latrobe (LBE) on Northwest Airlines via Detroit
- * Amtrak stops in Greensburg, East bound in morning (Approximately 8:02AM), West bound in evening (Approximately 7:00PM), East bound on Sunday approximately 2:00PM.

1:00PM Friday, March 27 through 11:00pm Saturday, March 28, 2009 Registration will begin at 10:00AM on Friday. Set up any time after 8:00AM.

Sheraton Four Points Hotel. Route 30 East, Greensburg, PA. Room rate: \$95.00 plus tax. (724) 836-6060. Mention "Prototype Modeler's Meet"

For more information contact: Dick Flock, 337 Elm Drive, Greensburg, PA 15601, 724-850-8882, jlerr337@verizon.net. Clinic volunteers please contact: Larry Kline, 4130 Bigelow Blvd Pittsburgh, PA 15213, 412-422-0678, lndkline@verizon.net

Please include a self-addressed stamped envelope with your inquiries.

Registration Form Registration Fee: \$35.00

Please make checks payable to: Dick Flock. You can memo RPM East on the bottom of your check.

Name_____ Email_____

Mailing
Address_____

City_____ State_____ Zip_____ Phone_____

Saturday Evening Buffet \$25.00 Yes No Thursday Operating Session Yes No

Number of Dealer Tables _____ @ \$20.00 each

MODELING B&O'S CLASS B-21 BAGGAGE CARS

BY BOB CHAPMAN

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



HO model of B&O Class B-21 baggage car #680, from NKP Car kit.

B&O's Diverse Baggage Car Fleet

B&O followers are often surprised to learn that B&O fielded eleven baggage car classes in the steam-diesel transition era, all listed under the B (baggage car) passenger car classification prefix. An additional six classes of similar cars were listed under the C (express car) classification.

Dominating the Class B listing were the standard four-door baggage cars grouped under class B-8 and its subclasses. Built between 1913 and 1929, this group totaled 118 cars in 1958, representing over two-thirds of B&O's total baggage car fleet. The fifteen B-8d's of 1929 would be B&O's final baggage cars purchased new from a carbuilder.

The remaining eight baggage car classes would either be acquired through merger or rebuilt from other car types. Four classes (B-17, B-18, B-23, and B-25) totaling fifteen cars by 1958 would come with the 1932 BR&P acquisition. Classes B-26 and B-26a (one car each) would be rebuilt in 1944 from class F-4 dining cars, and the ten cars in class B-27 would be converted in 1945 from class C-9 horse-express cars. Baggage-mail cars sourced the remaining conversions – a pair of B-20's from “shorty” 64-foot baggage-mail cars (1939, 1953), and our subject, the B-21's from the E-7c baggage-mail car class.

B&O's Postal Car Fleet is Born

To understand why the E-7c's came to be rebuilt as baggage cars, we'll briefly recap the development and initial decline of B&O's railway post office car fleet.

As railway mail traffic evolved and grew from the earliest days of railroading, mail cars were frequently rebuilt from lightly-constructed castoff coaches or baggage cars; subject to heavy damage and fire in collisions, they offered a dangerous environment for the postal clerks busy in their interiors. By 1911, the United States Post Office had evolved specifications for Railway Post Office car construction, covering everything from carbody strength to interior layout. In 1911, legislation required one-fourth of each railroad's wooden mail cars to be replaced by all-steel cars each year, starting in 1913.

B&O initially responded by ordering 27 postal cars with full-length mail compartments in the H-7 (1912), H-8 (1912), and H-9 (1913-17) classes. Intended for mainline service, the cars offered the greatest capacity and safety where loads, train lengths, and speeds were greatest. A second wave of 14 cars followed, B&O's class E-7 (1914-17). Different in design, these “Baggage and Mail” cars combined a 30-foot mail compartment with a baggage compartment, and were ideally tailored to secondary trains and routes.

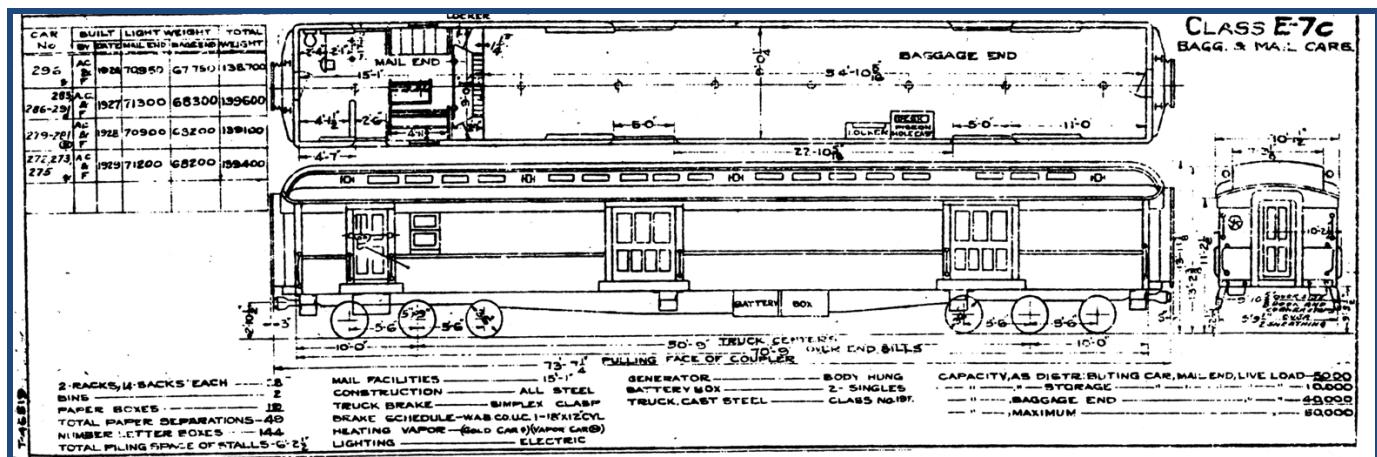


Needing a trip through the wash rack, B-21 #683 rests in Chicago in June 1962. Rebuilt from late E-7c #273, she sports only two clerestory windows. Note the plated mail apartment window. *J. M. Gruber Collection*

Additional cars of both body styles would follow until the mid-1920s, when B&O began to address the growing mail demand on its many branchline trains. While the required service frequency was daily, volume was light, requiring only a 15-foot mail apartment with bins and cubbyholes allowing a single mail clerk to sort mail en route. The remaining 55 feet of carbody space was handy for express and less-than-carload shipments. Thus was born B&O's class E-7c in 1926.

The Populous E-7c's

B&O's initial E-7c order was four cars, numbered #296-299. At one end was the postal apartment, with both sides featuring a single door bordered by a single window. A mail catcher could be mounted across the door opening to retrieve mail without stopping from trackside cranes. Partitioned from the mail apartment was a 55-foot baggage space, accessed by a pair of five-foot doors on each side, one pair near the center of the car and the other near the carbody's end. Carbody architecture was typical of the era, featuring a clerestory roof and six-wheel trucks.

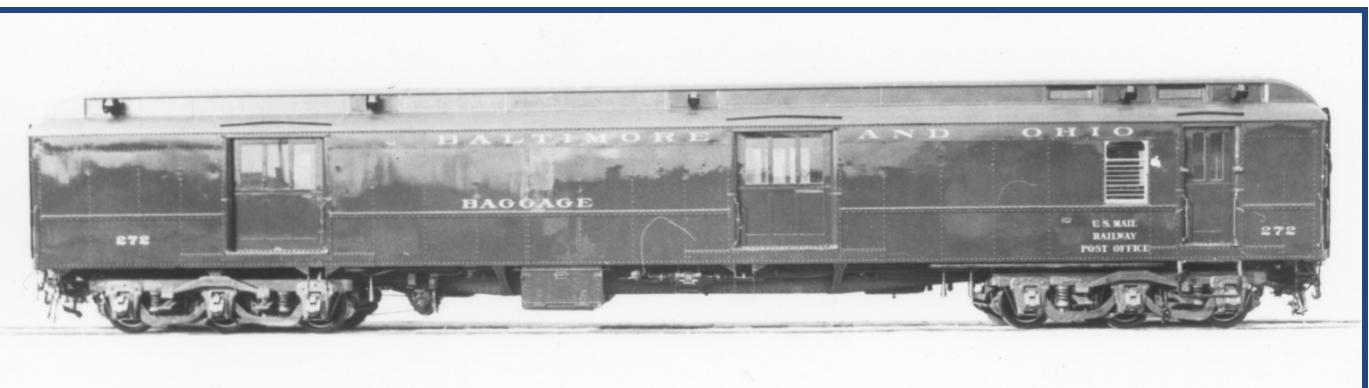




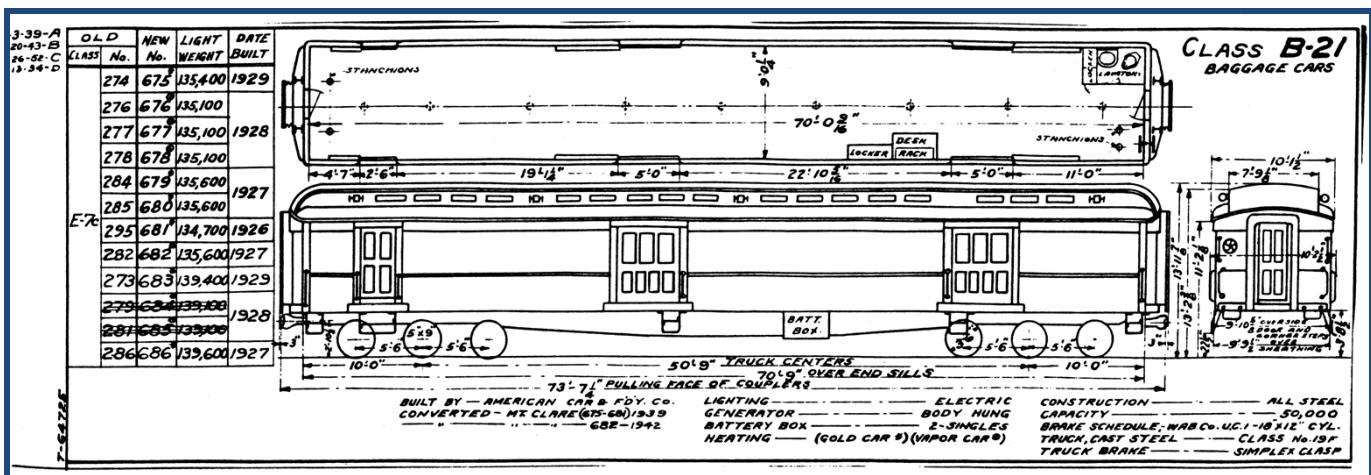
Built in 1926, baggage and mail car #295 was first-born of the E-7c class. Note its full set of clerestory windows – a signature feature of the early E-7c's. *ACF Industries, Ed Hawkins Collection*

B&O would acquire four lots of the design, one per year between 1926 and 1929 – a total of 28 cars, all from American Car & Foundry – making the E-7c's B&O's most populous postal car class. Car numbers ranged from #272-299, with each lot numbered lower than the previous one, and the lowest numbered cars the last to be acquired.

While all the E-7c's were built to the same basic design, there were interesting detail differences between the early and later lots of cars. Most noticeable was a change in roof style. First-lot cars had 17 windows and four Gold vents along each side of their clerestory. Last-lot cars had smooth, plated clerestory sides with five Gold vents, and only two clerestory windows immediately above the mail apartment.



E-7c #272 was the first of the final four-car batch of E-7c's built in 1929; by that date, only two clerestory windows per side remained over the mail apartment. Note that each batch of E-7c's was numbered lower than the previous batch. *ACF Industries, Ed Hawkins Collection*



Anyone Need an E-7c?

As the final E-7c rolled off ACF's assembly line in 1929, the US economy was beginning its contraction toward the Great Depression. Passenger and mail volumes went into decline, and the railroads looked to save money wherever they could. The advent of paved rural highways made branchline passenger trains a prime target for cost savings, and many runs were consolidated or eliminated.

As a consequence, B&O (along with many other railroads) found that it had overbought the specialized branch-focused postal cars with their small fifteen-foot mail apartments. A letter from W. B. Whitsitt dated 1/9/39 offers interesting perspective into the initial conversions, where nine baggage-mail cars abruptly had their mail facilities removed to meet surging express traffic needs for the 1938 Christmas season. (Copy attached to the end of this article) Seven of the cars were E-7c's; following the Christmas season their conversion was completed by

removing the interior partition, and plating over the mail apartment windows, and they were renumbered as B-21's. The six doors were retained, offering convenient access to all areas of the interior. As part of the conversion, the lavatory was moved from the mail apartment to the baggage end.

As the cars were converted, they were drawn from the E-7c class in almost random fashion, and renumbered into the new B-21 class beginning with #675. Conversion of the E-7c's continued well into the 1950s; the exact number of cars converted is unknown to the author, but photographic evidence suggests a total of at least 19 cars with numbers ranging to at least #693.

Dimensionally identical to B&O's standard class B-8 baggage car, the B-21's served interchangeably with them, and could be spotted on various days in the consists of many of B&O's passenger trains until the end of B&O passenger service.



Class B-21 baggage car #693 reposes in Shenandoah, Va., in October 1956. This photo suggests that the B-21 class extended well past the #686, the final car listed on the B&ORR diagram last updated in 1954. The windowed clerestory indicates that #693 was rebuilt from an early E-7c. *Railway Negative Exchange*

NKP Car to the Rescue

As one who enjoys modeling the diversity of B&O's passenger fleet, replicating the B-21 in HO model form was a daunting task, requiring a complex kitbash which would only approximate some of the signature features of the B-21. Thus it was with great anticipation when NKP Car (www.nkpcarco.com) announced that its new series of seven B&O heavyweights would include a B-21. (Other cars in the series were H-9 postal, B-8a baggage, D-14 combine, D-14ab dorm-lounge, and F-4bm and F-4bn diners.) As a bonus, those needing an E-7c will note

that it is a simple kitbash from the B-21; simply cut out a mail apartment window into each side and install a mail catcher, and you are in business.

NKP Car has continuously improved its offerings over the years. For its early models, NKP supplied only the photoetched brass sides, leaving the modeler to find an appropriate core body and details to successfully complete the model. This approach evolved to an offering of kits, where the sides would be mated with off-the-shelf components from other manufacturers to build a credible although usually

not exact model. Today's NKP's kits go one step further, with cast resin roofs and ends custom-molded by Pacific Mountain Scale Products and closely matched to the prototype being modeled. The only required purchases are paint, decals, and couplers. Through NKP Car's efforts, these are unusually good times for B&O the passenger train modeler.

NKP Car's B-21 – As Good As It Gets!

Upon opening NKP's kit, the first thing one sees is the beautiful photoetched brass sides (some of us are unusually attracted to bright objects!) Hard brass is used, reducing the risk that the delicate stirrups will be broken off with handling. When I accidentally dropped one of the baggage doors onto my concrete workshop floor, it rang like a bell. The etching is fine, and rivets are correctly sized. Locator dimples for the grabs are etched on the backs of the side – a nice touch which eliminates guesswork in finding a front-side locator buried among a row of rivets.

Next spotted is the nice cast resin roof, with its wide clerestory exactly matching B&O's signature 7'9" dimension. Separate cast resin ends match the style used on the prototype, and nest tightly below the curved ends of the roof.

Remaining in the box is an assortment of components from various manufacturers and styrene strips – most of what you need to complete a model accurately matching B&O's B-21.

Most modelers will be very happy with what is provided. The kit has a few issues bordering on nitpicky, and most can be addressed during assembly:

1. In my B-21 kit, the sides had a slight concave bend from top to bottom, a problem which affects the seven car types in NKP's current kit series to varying degrees. A F-4bn diner ordered at the same time arrived with sides perfectly flat, while a D-14ab baggage-dorm-lounge's sides had a severe concave deflection of 3/32" from top to bottom. Since there is no easy solution to this problem without risking greater damage, my best advice is to request perfectly flat sides when you order your models from NKP Car.

2. The sides, while nicely executed, lack the visible seams where the mail apartment window was covered with a steel plate during its conversion to the B-21.

3. The cast resin roof was developed as a "generic," to be used with several B&O passenger car classes.

Because of this, it lacks any windows on the clerestory sides. The later lots of the prototype E-7c were built with only two windows per side, and B&O was known to selectively plate over clerestory windows rather than maintain them. A photo of windowless #680 is included with the kit, but in surveying photos, the typical B-21 appears to have had at least a couple of clerestory windows. The clerestory IS hollow, and it may be possible to cut credible windows into it.

4. The E-7c's were built with baggage doors having three windows, located above three corresponding panels. In later years on B&O's various baggage car and combine classes, one or more baggage door windows were blanked, often leaving just the center window. In combination with window modifications or separately, the paneled bottom half of the door was covered with a reinforcing steel plate. In a few cases such as the photo of #687 included with the kit, the entire door was replaced with a new steel door featuring a single window. The doors included with the kit represent the steel-door option; in reviewing photos, this variation appears to be a non-typical, very late-life modification. Modelers requiring earlier-era doors can substitute fabricated or aftermarket doors for those provided.

5. The prototype B-21's ran on bolted-pedestal trucks; the spotting feature for these is the three bolts above each journal. For the B-21, NKP provided Eastern Car Works integral-pedestal trucks, a more modern type of similar appearance, but without the bolts. Proper trucks are available from Branchline and Walthers for modelers inclined to do a swap.

6. End detailing is only partially provided for in the kit and its instructions; excluded are several grabs typical of all head-end cars, and the uncoupling levers. Modelers will want to check their inventory of grabs and wire before tackling assembly.

7. A single set of core instructions serves the entire seven-kit array of B&O cars in NKP's latest release, with extra instruction lines and/or sub-instructions specific to each individual car type. Given the capability of today's word processors to easily cut and paste large amounts of text, customized instructions for each car type would seem at least as easy if not easier than the approach used. The B-21 is one of the simpler cars among the seven, and the branching and layering of the instructions is less a problem; I dread navigating NKP's instructions for my next project – the F-4bn diner. I found it helpful

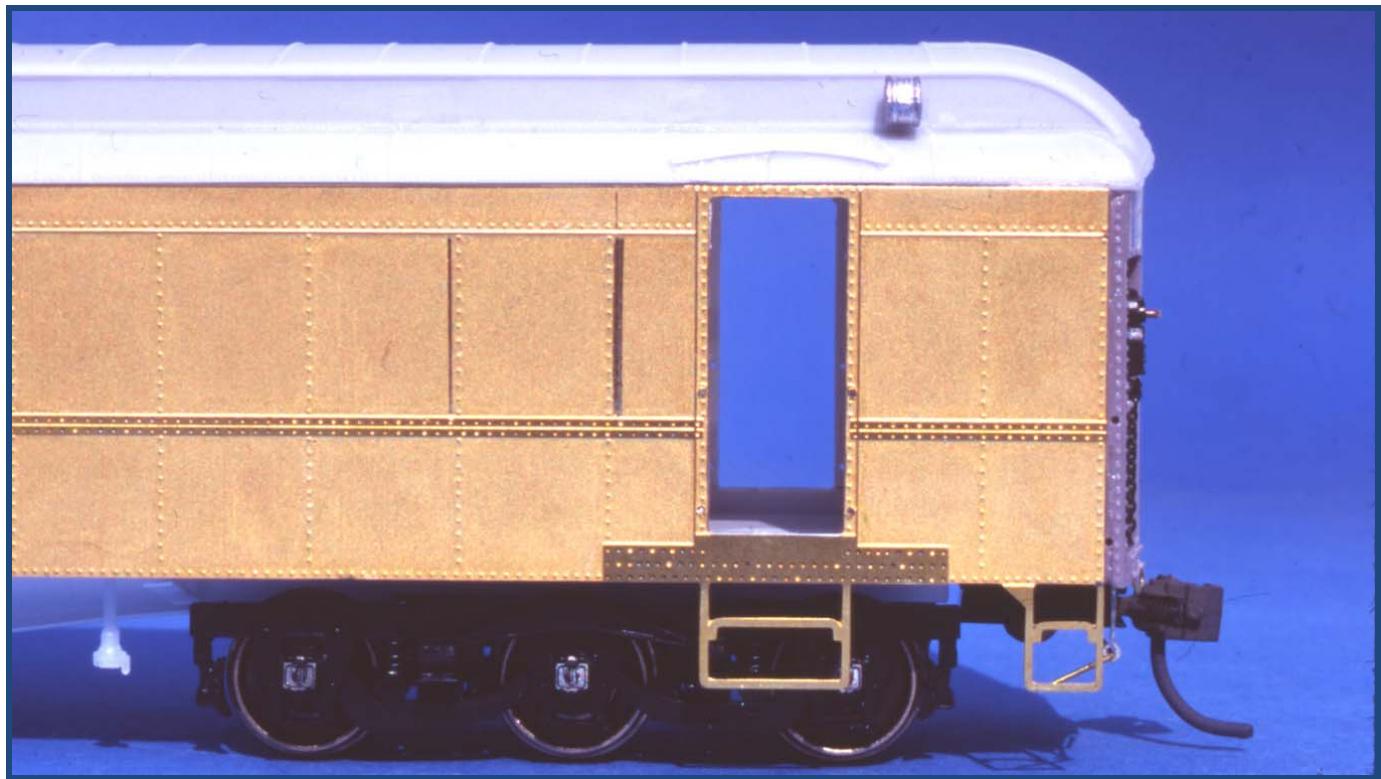
to cross out instruction lines that did not pertain to the B-21.

8. A grainy photocopy of a page from the book "B&O Salute" shows side views of three B-21's and their variations; while much better than nothing, end detail is lacking in all of the photos, and those having access to the book's original photos will feel fortunate. While there are several helpful diagrams accompanying the written instructions, there are no model photos, either in-process or completed. The less-than-detailed instructions and the lack of photos create a major thirst for more information as one assembles the model.

These notes should be taken as "modeler alerts" rather than gripes. NKP's B-21 is a fine kit, and anyone waiting for a better B-21 will be waiting a long time.

Building the B-21

It is sometimes said that if you give ten modelers the same craftsman kit, you'll get ten different modeling approaches. Each of us has our unique experiences, preferences, and quirks, and some of us enjoy the challenge of improving a kit's instructions. The B-21 offers considerable opportunity for differing modeling approaches. NKP Car's approach will result in a fine model. Where my approach differs, I'll give a reason; each modeler can consider it as an alternative approach to NKP's.



Scribed joints simulate the plated mail apartment window.

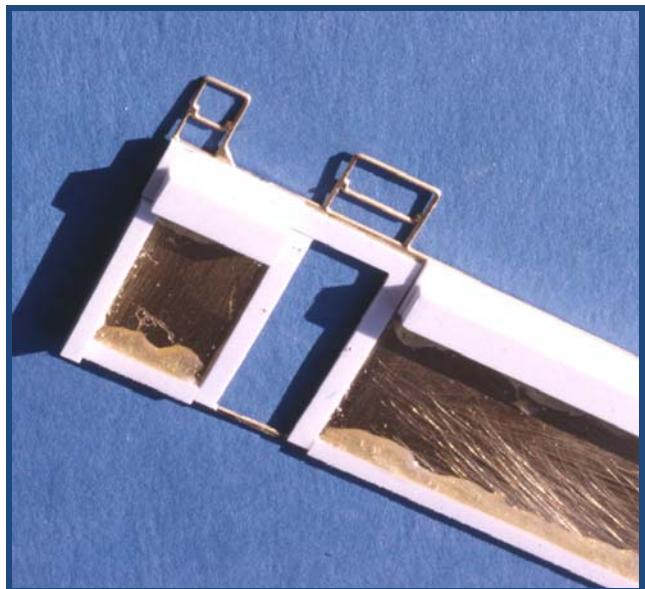
Begin with the sides, and follow NKP's instructions to where they mention window strips (the B-21 has no window strips). The seams for the plated mail apartment window can be simulated by several vertical passes of a scribe. Most modelers will want to choose the setback option for the baggage doors (Option A); it is easily accomplished, and results in a much better looking model. I used .020" x .100" for the door framing (rather than .030"), since it coordinates better with the .020" x .080" framing strip which we will add later to the tops of the sides, and eliminates the later need to notch the floor to

clear the doors. You'll need 12 strips 6'4" long for the door sides, four 6'9" strips for the baggage door bottoms, and two 4'0" strips for the mail door bottoms; a NorthWest Short Line Duplicutter simplifies cutting these. When dry, extend the grab holes through the styrene framing.

I find it easiest to mask and paint the doors prior to assembly; this eliminates the need to touch up the inevitable bleed that can creep under the masking tape where the inset doors meet the sides.

Framing With Caution

Having built over two dozen passenger cars with photoetched brass sides attached to a plastic roof and ends, I have developed experience (paranoia?) from some early failures that I attributed to poor gluing technique. There are several challenges: 1) All the parts must be clean and completely oil-free, 2) The rear surface of the brass has a mirror finish, with no "tooth" to help glue adhesion, and 3) As the room temperature varies, the brass will expand and contract at a different rate from the plastic, generating large forces at the glue joint. One or more of these problems resulted in glue joint failures when I simply cleaned the surfaces and glued with CA; worse yet, I found the failures are difficult to repair without damaging the finish of the completed model.



Interior framing was initially glued with Barge brand contact cement, then secured with 5-minute epoxy.

After a few hard knocks, I adopted the following approach, which has not failed (yet!). 1) Scratch the back side of the brass sides with coarse emery cloth or a scriber point to roughen the surface and improve adhesion. 2) Thoroughly wash the sides in a non-oily detergent, such as Ivory Liquid. 3) Initially adhere the styrene framing strips with a good contact cement; I use Barge brand, available at many shoe repair shops. Barge will maintain a strong bond, while remaining flexible to allow the brass to expand. 4) Secure the joint by running a bead of 5-minute epoxy along the joint between the brass and styrene.

I framed the tops of the sides with .020" x .080" styrene strip, as recommended by NKP. I ran the strip along the entire top edge, leaving gaps for later installation of the doors. At each end of the side, I

glued a vertical .080" x .080" styrene strip; the edge of this strip offers a wide bonding surface for the ends. For the bottoms of the sides, I first glued a .100" x .156" strip to a .040" x .250" strip using solvent cement. It's important that the tops of the two strips be exactly flush, otherwise the car will lean after the floor is installed; use a flat surface such as a glass plate will help align the .100" edge with the .040" edge. Glue the .250" edge exactly flush with the bottoms of the sides, leaving gaps for the doors.

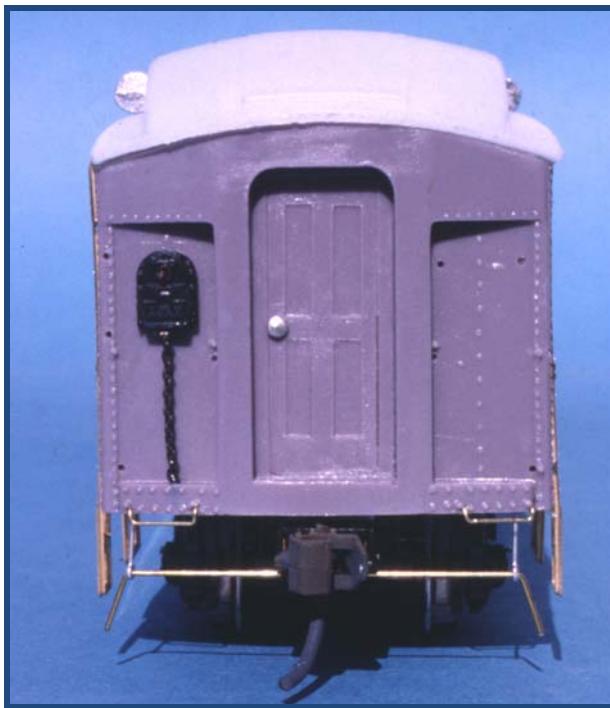
To Paint or Assemble?

NKP recommends painting and lettering the sides before assembly. This is often advisable where it can eliminate some of the masking needed for complex paint schemes. In the case of B&O's blue-gray heavyweights, it makes more sense to assemble before painting. The culprit is the gray stripe, which not only runs the entire length of the brass side but also extends onto the ends. On most cars it will wrap around the end slightly past the corner, although photographic evidence shows the stripe ending at the corner on the B-21. If you paint and letter the sides before assembly, you will later have to paint the gray stripe extension on the ends. Conversely, if you assemble before painting, you will mask the sides and ends at the same time assuring a good stripe alignment, with the only inconvenience being the need to mask the sides from the roof, a relatively simple masking operation. For my model, I set the unpainted sides aside, and began work on the ends.

Detailing the Ends

The very nice cast resin ends come attached to a sheet of flash; the easiest way to separate the ends from the flash is to sand their backs, drawing the ends back and forth across a sheet of medium sandpaper resting on a flat surface such as a piece of glass. The flash will fall away, and the ends will be the correct thickness intended by the manufacturer.

The ends on the prototype B-21 bristle with detail, largely ignored in NKP's instructions. Much of the omitted detail are grabs required for safety compliance. Since the B-21 will sometimes be the lead car in a consist, I wanted the end detailing to be complete and correct. In some cases we will drill for detail now but add it after masking and painting the gray stripe.



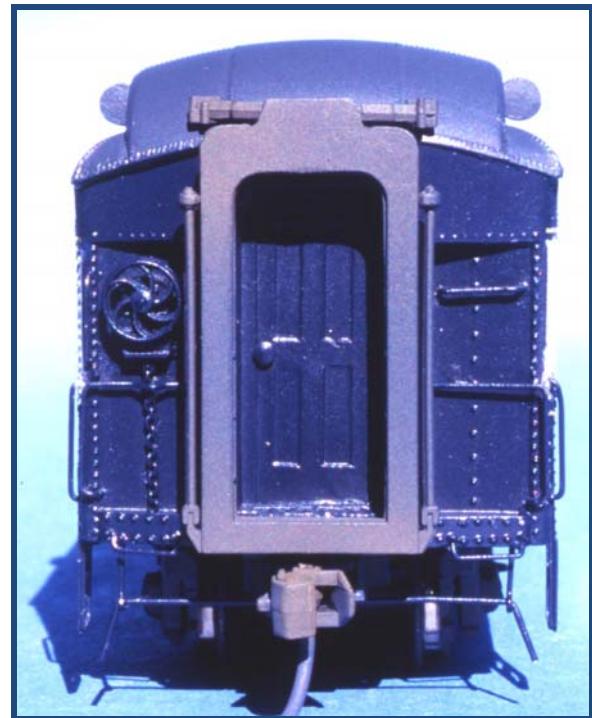
B-21 end detailing; the opposite end is identical.

As NKP suggests, the top of the UP-style diaphragm needs to be shortened. Prototype photos show the B-21 diaphragm to have a tab remaining at the center, providing a seat for the diaphragm spring which extends behind it to the roof. Using photos as a guide, remove 6" from each side of the diaphragm top, leaving an angled tab 1'9" across its top. Since the diaphragm will be painted black, we'll install it after painting the blue ends.

NKP provides a pair of heavily-cast cloverleaf-style brakewheels with the kit. Since I was unable to validate this style from photos, I replaced them with Precision Scale's #31118 brakewheels. The B&ORR diagram shows a brakewheel only on the baggage end of the B-21, although head-end cars often had a brakewheel at both ends; one of the cars in the "B&O Salute" photo series appears to have a brakewheel also on the postal end, so I installed mine on both ends. The prototype brakewheel housing is a casting consisting of a flat plate with a ribbed centerpost; unable to match this, I used some Cal-Scale Ajax gearboxes from my scrapbox. In retrospect, a small square of styrene might have been a better choice.

Mount the gearboxes so that the brakewheel center is 5'0" above the bottom of the ends, centered on their left side. A chain runs vertically from the bottom of the gearbox through the endsill; drill (#55) the endsill for the chain, and install a length of small-link chain. I sanded the backs of the brakewheels to thin them,

but delayed installing them until after masking and painting the gray stripe.



Completed end; the two ends are identical.

Each side of the ends has four grabs, only one of which is referenced by NKP's instructions – the drop grabs on the end sills. Drill (#78) for them below the bolt heads near the bottom of the endsill on each side of the diaphragm opening; it helps to angle the holes slightly upward. Install Westerfield #1197 drop grabs.

There is a grab on each side of the ends, 10" above their bottom; drill (#78) for Detail Associates #6601 vestibule grabs. Alongside the brakewheel on the left side is a vertical grab; drill 3'9" from the bottom of the end for a Westerfield #1198 straight grab. On the right side is a horizontal grab 5'3" above the bottom edge, also a Westerfield #1198. On the bottom half of each side is a complex-shaped L-grab; using photos as a guide, bend it from .015" wire, and drill as needed. Note that the left-side grabs have a circular loop to clear the brake chain. Install all of these remaining grabs after masking and painting.

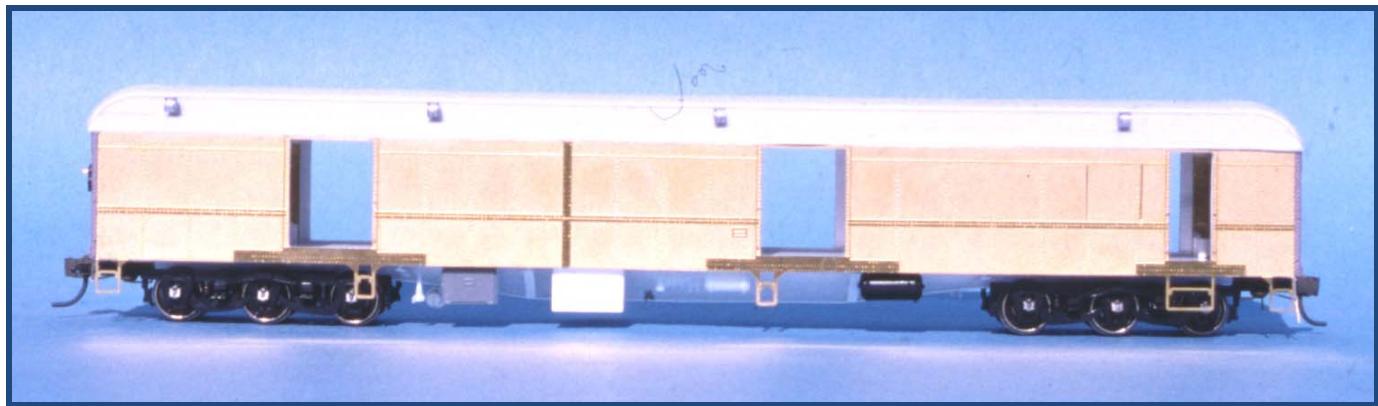
Uncoupling levers run across the bottom of the ends underneath the couplers, suspended from DA #2222 long eyebolts. Drill the endsill bottoms for them 9" from each end. Since the eyebolts are exposed to bending, we'll install them later. Install an escutcheon pin doorknob at the left side of each end door. Since we already glued .080" x .080" framing

strips to the sides, the four .040" x .080" strips on the ends are not needed. As with the sides, we will paint the ends after assembly.

Assembling the Carbody

Clean flash from the very nice B&O-style clerestory roof. Prototype photos show that the roof overhangs the sides by a couple of inches; to model this effect, there is no need for the .010" x .100" roof spacers recommended by NKP.

To make it easier to align roof details with corresponding features on the sides, we'll assemble the carbody before adding the roof details. Test fit the sides, and cut away the roof tab behind the door openings, leaving ample clearance to later add the doors. Test fit the ends, making sure that their arched tops fit snugly under the curved roof bottom; file the end tops as needed for a perfect fit.



Left side, ready for painting.

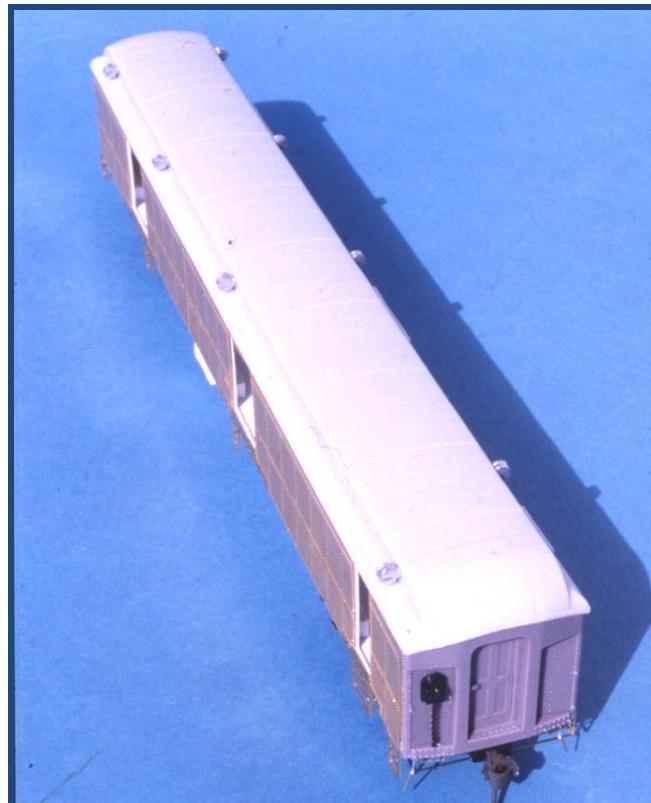
Since we are gluing to cast resin, use CA for these assembly steps. Place three or four dots of CA along the top framing strip of a side, and tack it to the roof, making sure the side is centered on the roof. Repeat for the opposite side. Similarly tack one end to the roof, making sure it is centered. Tack the bottoms of the sides to this end, making sure each side is properly aligned top to bottom with the end. Repeat for other end. If satisfied with alignment of all joints, run a bead of CA along each joint on the carbody interior. The resulting carbody should be strong and square.

Detailing the Roof

The roof lacks clerestory windows, a common feature of the B-21 class. Since the clerestory on the cast resin roof is hollow, it is possible to cut window openings in it if you choose to model a B-21 with windows. I took the easy way out, choosing to model the windowless #680.

B&O's favorite roof vent was the barrel-style Gold vent. NKP supplies eight of them with the kit; since the B-21's had either eight or ten vents, I went with the eight-vent variation. The three vents on the baggage end are mirror-imaged on each side of the clerestory. Estimating from photos, I drilled (#52) for them at 4'6", 20'0", and 37'0" from the roof corner at the baggage end. The vent on each side of the

postal end is staggered – one at 61'0" and the other at 67'0".



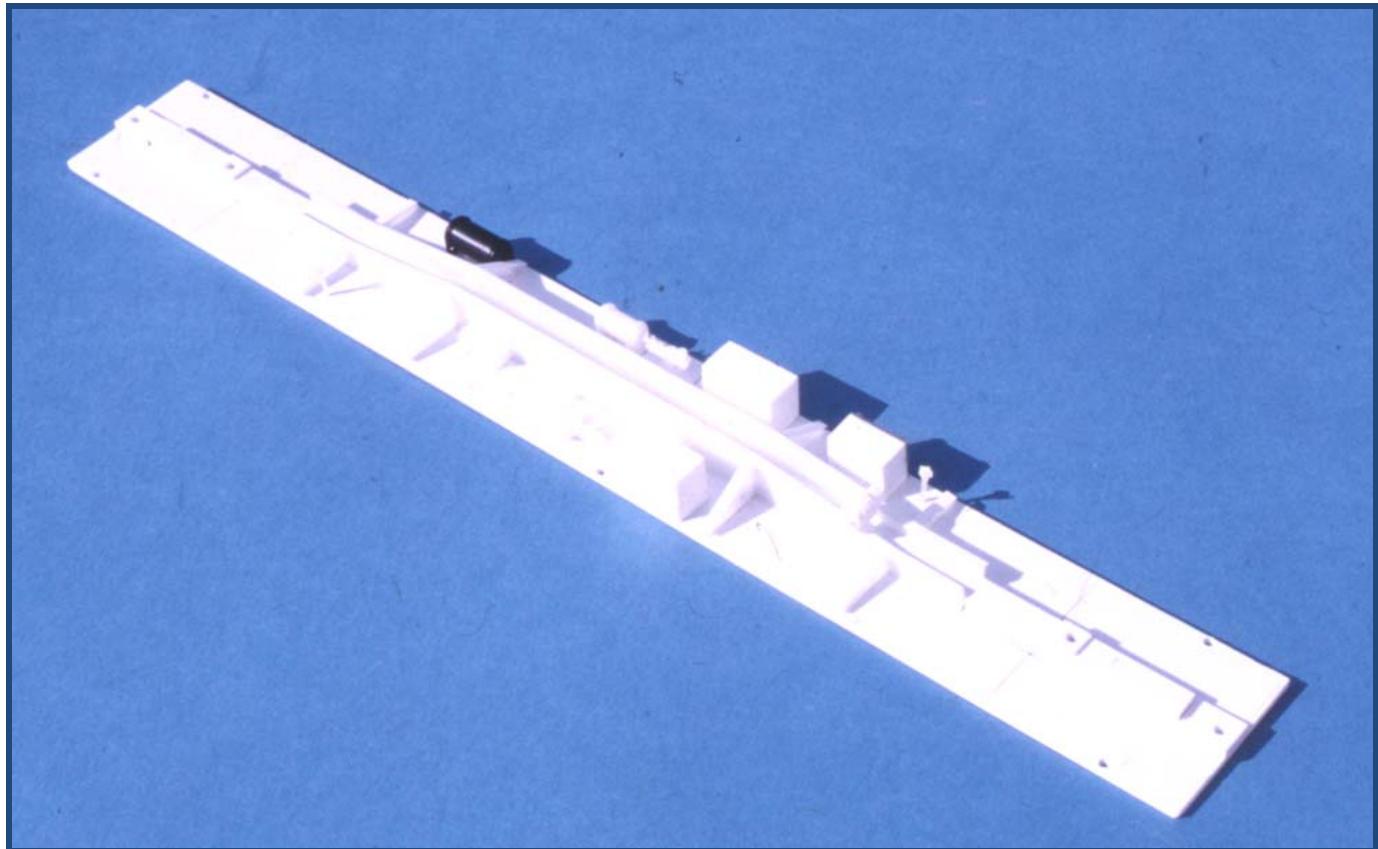
Above the baggage end, the barrel-style vents are mirror-imaged; above the mail apartment, they are staggered.

For the drip edges over the baggage door, I used .020" x .020" styrene strip. Cut four pieces 6'6" and two pieces 4'0" long. Glue them with CA, centered over each door in a gentle arc. Tack one end, bend in an arc and tack the other end, then run a fine bead under the strip. I was unable to spot any grabs on the prototype B-21's roof.

Detailing the Floor

With its kit, NKP supplies an extruded styrene Bethlehem Car Works floor. I have never been a fan

of this floor; its centersill is often slightly off-center, and the floor is thin, resulting in the need to install each underbody component on a styrene pad. I substituted .060" styrene, which results in a floor inset only a couple of inches above the bottoms of the sides – a perfect height for the underbody components. Cut your floor so that it fits snugly between the sides and ends; on my model, the floor dimensions were 9'0" x 70'7". Since we used .020" styrene for framing the doors, there is no need to notch the floor to clear them. Ignore the step referencing vestibule steps; the B-21 lacks them.



The underbody components can be placed after installing the centersill and transverse beams; the kit floor was replaced with a styrene sheet.

On the floor, draw a centerline, then layout the truck centers. On the prototype the truck centers are 50'9", assuming a kingpin location directly above the center axle. Both the Eastern Car Works truck supplied with the kit and my replacement Branchline trucks have a kingpin offset 1'4" outside the center axle. Thus on the model, the spacing of the truck screws will be 53'5".

Cut coupler pads from styrene strip .060" x .250", 2'6" long; glue them to the floor flush with each end. Between them, install a 1/8" x 3/16" styrene strip, which will serve as a mounting surface for the trucks as well as a spacer for the centersill beams. Note that

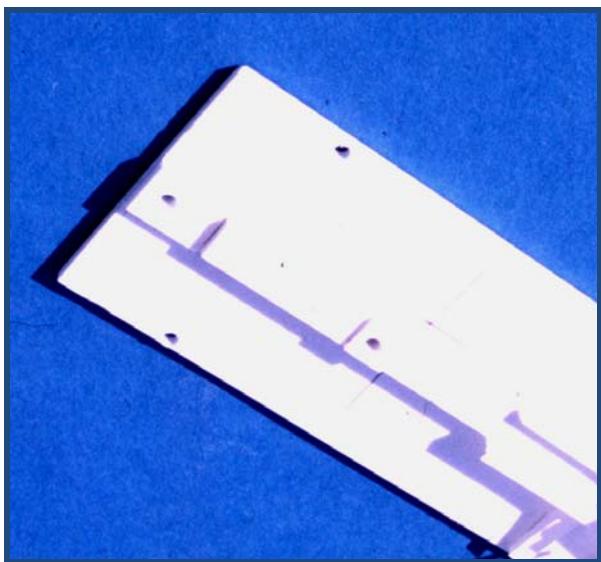
the 1/4" styrene channel supplied with the kit will space the centersill beams too far apart; the maximum spacing found on most heavyweights is 18". Cut a pair of 3/16" x 3/16" x .030" pads from styrene, and glue one at the location of each truck screw; these will serve as bolsters, and will allow the trucks to flex over the longitudinal irregularities sometimes found in our trackwork. Drill (#50) and tap for 2-56 truck screws.

Shorten the two centersill beams to 42'9" to clear the trucks, and glue them to the sides of the spacer. Add the transverse beams where the centersill beams

begin their taper. A .010" x .080" flange adds a nice finishing touch to the centersill and transverse beams.

Diagram D is drawn to scale, and accurately depicts the location of the underbody components as shown in prototype photos. The only exception is a small box (toolbox?) on one side of the car to the right of the battery box. This box is not referenced on the underbody diagram or provided in the kit, but can easily be built from styrene. It appears to be about 3'2" wide and 2'4" high; I added a molded faceplate from my scrapbox.

You'll likely want to secure your floor to the carbody with a few 0-80 screws. Drill (#55) three holes per side through the floor and the .100" x .156" strip. Remove the floor, and drill (#51) clearance holes in the floor.



Closeup of bolster and coupler pad.

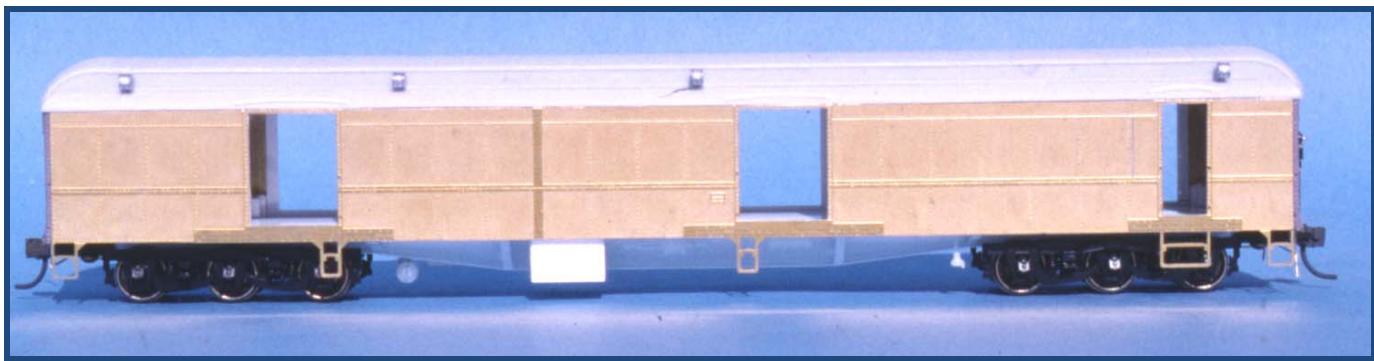
Assemble your trucks; if using Branchline replacement trucks, leave off the brake beams to minimize interference with the centersill and coupler pockets.

With the floor installed, align the coupler box ends with the ends of the carbody, then drill (#50) and tap for 2-56 coupler mounting screws. Mount the coupler boxes and test-install the trucks, then check coupler height. I found no need for the Kadee #850 coupler spring or the shim washers referenced in the instructions.

Install the DA #2222 long eyebolts which will suspend the uncoupling levers. Using the photos as a guide, bend uncoupling levers from .015" brass wire and install them. Disassemble the model into its subassemblies, and wash it with a non-oily detergent such as Ivory Liquid. Your model is now ready to paint.

Painting the B-21

For additional specifics on B&O paint and lettering selection, see the accompanying article, "Painting B&O Passenger Car Models".



Right side, ready for painting.

Begin by spraying the carbody with Primer; this will not only improve adhesion but will also provide a consistent color base under the subsequent coats.

While the normal rule is to "paint dark over light," I chose to paint the blue first to simplify masking. After painting the carbody, doors, and grabs blue, allow them to dry thoroughly; it may take several

days until no solvent odor can be detected from the model.

While waiting, paint the underbody, trucks, couplers, and diaphragms Grimy Black. Unless modeling a newly-shopped car, consider some rusty grunge weathering on these components.

When the carbody is completely dry, mask for the gray stripe. Each modeler will have his own favorite masking medium; mine is garden-variety Scotch Magic Tape in the green plaid dispenser. It is thin and flexible, and will not lift paint from the model if it is removed promptly after the paint is applied.

On many B&O passenger cars, the gray stripe will wrap a few inches around the ends; on the B-21, the gray stripe appears to end at the carbody corners. Mask so that the top blue stripe on the letterboard is 16" wide. On some B-21's, the gray stripe ends at the middle of the belt rail – a daunting place to mask. On some others it ends below the belt rail, and I chose this option for my model. Measure the location of the gray stripe on the sides, and mask the doors accordingly.

A tip to reduce paint bleed under the masking tape – after the model is masked, spray a light coat of blue along the edges of the masking tape; this will seal the edges of the tape. After allowing some drying time, spray the gray, remove the masking tape, and allow the model to thoroughly dry.

Mask the sides, spray the roof Grimy Black, and remove the tape. Touchup the model as needed, and if necessary, apply a clear coat such as Floquil's Crystal Cote as a base for decaling, then allow the model to dry thoroughly.

Stripes and Letters

As discussed in the accompanying article, Champ and Microscale both offer B&O passenger car decal sets, both with their individual strengths and

Credit

The author is indebted to Bruce Elliott for his assistance in preparing this article.

Materials

<u>Manufacturer</u>	<u>Part #</u>	<u>Description</u>
Builders in Scale	250	Chain, 40 Links/Inch
Detail Associates	2222 2505	Eyebolts, Long Wire, .015"

weaknesses. Since I have standardized on Champ, I used their decal sets for my project.

Begin with the stripes – a pair of 1" stripes, one near the bottom of the blue stripe on the letterboard, and the other near the top of the blue stripe below the windows. Before starting, install the doors, so that the stripes will be properly aligned. Using the photos as a guide, apply the stripes.

The letters on the Champ roadname are spaced too wide for the B-21, and must be cut apart and applied as individual letters; a spacing of 9" between letters will give a correct roadname length. The Microscale set offers a choice of close-spaced roadnames, both of which were used on various prototype B-21's.

The Railway Express Agency lettering is too small in both sets. I used some larger lettering left over from a different road's Champ set; larger lettering can also be found in Champ's set #HD-15D. Photos show the REA lettering in a variety of locations on the prototype; select the location which is correct for the car number you are modeling. I placed mine centered between the two baggage doors.

The numbers series for the B-21's began at #675 and appear to extend at least to #693. I chose #680 for my model, since its prototype photo shows a windowless clerestory.

Seal the decals with a matte finish clear coat such as Floquil's Flat Finish. When the paint is dry, install the remaining grabs, gluing from the back. Barge brand contact cement (available at shoe stores) is handy for installing the diaphragms.

After installing trucks and couplers, my model weighed 5 ounces, slightly below the NMRA recommendation of 6 ounces for a car this length. Since my B-21 has performed flawlessly on my layout, I found it unnecessary to add any additional weight. Finish with a final round of paint touchup, and she is ready to roll!

	6601	Grabs, Vestibule
Evergreen	104	.010" x .080" Styrene Strip
	120	.020" x .020" Styrene Strip
	124	.020" x .080" Styrene Strip
	125	.020" x .100" Styrene Strip
	149	.040" x .250" Styrene Strip
	159	.060" x .250" Styrene Strip
	164	.080" x .080" Styrene Strip
	177	.100" x .156" Styrene Strip
	188	.125" x .188" Styrene Strip
	9020	.020" Styrene Sheet
	9030	.030" Styrene Sheet
	9060	.060" Styrene Sheet
NKP Car		B-21 Baggage Car Kit
Precision Scale	31118	Brakewheel
Walthers	1012	Screws, Round Head, 0-80x3/16
Westerfield	1197	Drop Grabs, 18"
	1198	Straight Grabs, 18"
(See Text)		Trucks, Bolted Pedestal Decals Paint



HO model of B&O Class B-21 baggage car #680, from NKP Car kit.

Baltimore, Md., January 9, 1939.

173 - Lettering and Marking - Converting Nine 15'0" Mail Apartment Cars Into Baggage Cars -

Messrs. W.S.Eyerly

J.Howe

H.J.Burkley

J.R.Grove

W.F.Harris

J.P.Hines

T.E.Mewshaw

J.W.Schad

H.M.Sherrard

H.L.Geidenberger

E.Stimson,Jr.

W.A.Bender

W.W.Galder

A.H.Keys

F.A.Teed

H.A.Harris

W.P.Hollen

E.H.Meckstroth

The following nine cars had the mail facilities removed the latter part of 1938 to provide additional baggage cars during the Christmas Season. Since that time it has been decided to retain these cars in baggage service. Therefore, the cars are to be renumbered as follows:

<u>Old No.</u>	<u>Class</u>	<u>New No.</u>	<u>Class</u>
292	-	484	B-20
294	-	485	B-20
274	E-7c	675	B-21
276	E-7c	676	B-21
277	E-7c	677	B-21
278	E-7c	678	B-21
284	E-7c	679	B-21
285	E-7c	680	B-21
295	E-7c	681	B-21

It is important that these cars be renumbered at the earliest possible moment in accordance with diagram print T-46558-E now in the hands of all concerned.

As the new numbers and classes will appear in the new Summary of Equipment Booklet now being prepared, reports should be forwarded to this office on forms 1059 and 2404-Rev., and in addition forward form 2404-Rev. to all others concerned, including Mr. J. J. Tatum, as each car is renumbered.

L-J

Copy to

Messrs. G.H.Emerson

J.J.Tatum

G.R.Galloway

E.J.McSweeney

C.M.House

F.A.Baldinger

H.W.Brewer

Harry Rees

A.K.Galloway

F.H.Becherer

J.A.Latchford

G.F.Malone

Whitsitt.

Whitsitt Letter, B&O's first B-21's were hastily modified to address a baggage car shortage during the 1938 Christmas rush. Bruce Elliott Collection.

PAINTING AND LETTERING B&O PASSENGER CAR MODELS

BY BOB CHAPMAN
PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.

(Author's Note – This article is an expansion of paragraphs originally appearing in "Modeling B&O's Cincinnati-Pittsburgh Workhorse", The Sentinel, Q1/2004 – presented here for the convenience of modelers needing a direct reference for B&O passenger car painting and lettering).



B&O's Colorful Passenger Train Fleet

Until 1937, the dominant color of B&O-owned passenger equipment was olive green, a color chosen to harmonize with the prevailing color of Pullman's heavyweight sleepers. Notable exceptions, and the first incursion of blue into B&O's passenger fleet, were the ten wooden-car trainsets introduced in 1890 to serve B&O's newly-completed New York-Washington "Royal Blue Line". Blue as a primary color was revived for the 1935 introduction of the two pioneering lightweight trainsets, now themselves named the *Royal Blue*, which covered the same route.

As the streamliner era dawned, B&O upgraded its image and competitiveness with a series of new trainset introductions, featuring cars modernized from existing B&O- and Pullman-owned heavyweights. The new colors chosen were blue and gray.

First to wear the new scheme in 1937 were the trainsets for an improved version of the *Royal Blue*, featuring modernized heavyweight cars to replace the rough-riding 1935 lightweights. Soon to follow were similar modernized heavyweight trainsets for the *Capitol Limited* (1938), *National Limited* (1940), *Columbian* (1941), and *Cincinnatian* (1947). All the while during this period, with the exception of a few standby cars for the above trains, olive green remained the standard for B&O's remaining passenger equipment.

In 1947, B&O elected to further unify the aesthetics of its passenger car fleet by specifying solid blue paint with a single gold stripe for its remaining cars. Excepting the new lightweight *Columbian* introduced in blue-gray in 1949, this arrangement lasted until 1953, when blue and gray was standardized for most other B&O passenger car classes. Notable exceptions were the blue C-series express cars and non-air-conditioned coaches, and blue-trimmed stainless steel cars.

When it came to roof colors, B&O seemed to have trouble developing a consistent standard. When the blue/gray scheme was first introduced, roofs were black with a wide gray stripe along the eaves. In 1944 the gray eaves stripe was removed, only to be reinstated in 1948 then again dropped in 1950.

With B&O's passenger cars cycling through the paint shop every two to four years, the various changes in paint standards did not immediately affect all cars in the fleet. In some cases, obsolete paint arrangements could be spotted years after they had been discontinued, allowing considerable room for "modeler's license".

Representing B&O Blue and Gray

Color involves both science and perception. Model paint can be perfectly matched to a prototype color

sample, but look wrong under layout lighting. For those desiring an exact match, blue and gray B&O color sample cards appear in Arthur D. Dubin's *Pullman Paint and Lettering Notebook*.

B&O's blue is a very dark, blackish blue. For my blue, I have standardized on Floquil's B&O Royal Blue, a near-perfect match for the color chip but

unfortunately no longer produced by Floquil. B&O passenger train expert Bruce Elliott favors Floquil Dark Blue, a close match to the color used on LifeLike E-units and Walthers passenger cars, while B&O modeler/historian Jim Mischke favors Scalecoat's B&O Royal Blue. Other paint manufacturers currently listing a B&O blue are Modelflex and Polly Scale.



Perhaps the poster-child for poor paint selection is Key's factory-painted brass *Cincinnatian*; it's medium blue is much too light even under layout lighting.

B&O's gray is a medium, yellow/green gray, and is not currently catalogued as such by any paint manufacturer. To approximate the prototype color chip, Jim and Bruce favor Floquil D&H Gray; Jim tints it further with a few drops of medium green. My personal choice is Floquil Reefer Gray, lightened with two parts of Reefer White. This results in a mix

considerably lighter than the color chip, but which best simulates in my layout room the high reflectance of B&O's gray in bright daylight. Tip – in masking heavyweights, it often works best to reverse the normal light-to-dark painting sequence and paint the blue first, then the gray.



Repainted *Cincinnatian* – much better!

The roof and underbody components on most heavyweight cars are black, but unless your car has been freshly shopped, this black will be weathered, and untouched by the carwashers. The roof will have a sooty, weathered appearance, while the underbody appurtenances often ended up be a grungy, rusty color, regardless of original color.

B&O Lettering Options

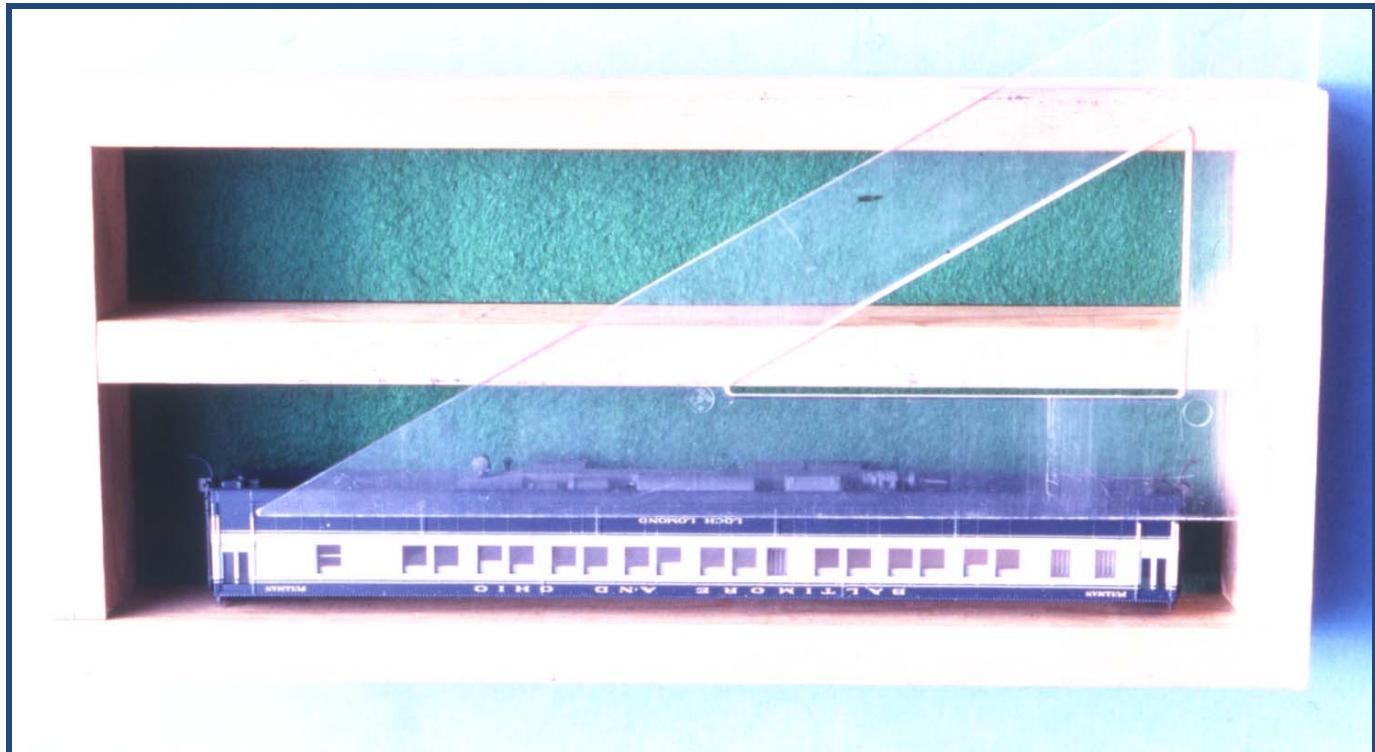
Two decal options exist for lettering HO-scale B&O passenger equipment – Microscale's #87-797 and Champion's #PH-9D. Each set has its advantages and disadvantages. The Microscale set is by far the most complete, containing the roadname in four useful lengths (25, 29, 34, and 43 feet), and an excellent selection of supplemental lettering ranging from car names to drumhead emblems. Champ's set is much simpler, featuring a single 36-foot roadname, and lacking car names. Despite rumors to the contrary, at this writing Champ is still in business, and set #PH-9D is still available.

Letter spacing of the B&O roadname on B&O's heavyweight passenger cars can vary, depending on the length of the car and space consumed by letterboard interruptions such as baggage doors. On a typical heavyweight coach, the roadname is about 42'0" long. The 36'0" Champ roadname can be used

to represent the 42'0" length by increasing the space between the roadname's three words. On head-end cars, the roadname can be 26' or 29' long; for these cars, the Champ roadname will need to be cut apart and applied letter by letter. A good rule to follow is to find a photo of the car you are modeling, and space the words and letters accordingly.

Lettering on B&O passenger cars is not yellow, but an imitation gold color named Dulux (Floquil Mud is a close match). Champ's set consistently represents this color dead-on, while Microscale's printing batches have varied over the years from the correct dulux to a bright yellow. The font on Microscale's set appears a bit delicate vs. the B&O prototype, while Champ's appears close. Champ offers 1" stripes (set #S-54) to match; Microscale's corresponding set is #87-124-8.

Recognizing that the perfect B&O passenger decal set is yet to be produced, either brand will do a credible B&O lettering job; for consistency, I have standardized on Champ's decals for my models, at times enduring the task of applying roadname letters individually. The "Stripemaster" described in the March 2002 issue of *Model Railroader* is a handy tool for assuring alignment of stripes and lettering on the carbody.



The "Stripemaster" described in the March 2002 issue of *Model Railroader* makes aligning stripes and lettering a simple task.

TURNING THE WEST END INTO THE SHENANDOAH SUBDIVISION - PART 2

BY FRAN GIACOMA

PHOTO BY AUTHOR UNLESS OTHERWISE SPECIFIED.



Introduction

In Part 1 of this saga, I described my rationale for changing the locale of my HO Baltimore and Ohio themed layout from the Cumberland Division West End to the Baltimore Division Shenandoah Sub-Division. Now that I've made the change, let's explore how to cram 50 miles of branch line into an L shaped basement measuring 30' x 25'.

Benchwork, Benchwork Everywhere and not a Track in Sight

Recall that my two main goals were to develop a track plan to fit my basement and to be up and running in a year. To accomplish this, I wanted to use my existing benchwork as a much as possible. It is a combination of brackets attached to the wall and freestanding wooden open frame work. I use 1" pink or blue Styrofoam insulation foam board for my base, Woodland Scenics N scale roadbed and code 70/code 83 track. More about the choice of roadbed later. On past layouts, I used 3/4" plywood supporting 1/2" homasote on L girder benchwork. It was a killer to

tear down and dispose of come moving time. This new stuff goes up in a hurry, is cheap, and is clean and easy to work with.

I'm a real operations type guy. I like to walk around with the train and be close to it as a person railfanning it would be. Although the real Shenandoah SD has numerous grades on it, I wanted this layout to be relatively flat so the cars would not roll away during switching moves like they did on portions of the West End layout. Therefore, I raised the "valley" sections of the old layout up to its highest point which put the top of rail at 51" above the floor. For me, the track is now at shoulder level (I'm 5'-6"), but still easy to work on without using a step stool. As most of my benchwork consists of 10"x 12" metal L brackets attached to the wall, it was not difficult to raise them to all the same level and attach foam board to the top of them. Foam board risers were screwed/glued to the wooden open frame benchwork to raise the "level" foam board to the

desired level. Once the foam board was in place, it was simply a matter of laying the roadbed and track.

On the West End, I used Woodland's Scenics HO scale roadbed (by the roll) between the foam board and the track. It served as somewhat of a sound barrier and made a decent "roadbed" section. However, it proved to be too wide and too thick for the "B&O track look" I was going after. A lot of B&O track at the time had the ends of the ties showing with little ballast under them. From the many pictures I have seen, only the heavily used mainlines (like the West End) had a "shoulder" of ballast shoulder coming off the ends of the ties. Even then, it extended about 6" out from the end of tie before dropping off to the sub-ballast, which consisted mostly of cinders. On the Shenandoah SD, I have been using Woodland's Scenics N scale roadbed with results being very close to the look I am seeking. Since the N scale roadbed is not as wide as the ties, the ballast ends up under them with their ends showing. Also, the roadbed is thinner than the HO version and provides about a 6"-8" layer of ballast under the ties, which is more prototypical for the type of track of that era.

Places to Go, Industries to Switch

Now that I had the layout up to all one level and the basic mainline in place, it was time to lay out the specific stations/towns or Layout Design Elements (LDE) that I wanted to model. I used the following B&O references:

- 10/1956 Baltimore Division employees timetable
- January 1, 1954 Form 6
- May and November 1953 Operating Info and Data for Officer's Special Trains on the Eastern Region
- information gleaned from that great group of B&O fans on the Yahoo list

Between all of them, I was able to gather information concerning the name and type of industry, the type and amount of commodity shipped/received and the track arrangement. Here they are moving from east to west:

Harpers Ferry – this is at the throat of the staging yard (which represents Brunswick Yard) and is there only as a train order office. I did not model the true scene with the bridges and tunnel as I did not have the space.

Millville – I wanted to re-use a three track coal loading facility from my West End layout as it was in

the right location geographically for the current layout. Plus I could use 4 different car types (boxcar, gondola with canisters, covered hopper and regular hopper car) at one location by having two industries (Standard Lime & Stone Company and Michigan Limestone Company) using the three tracks. I also added a passing siding where trains could meet and make runaround moves and a 2 car Team Track. Some minor work had to be done to modify the coal loader into a limestone/stone loading facility.

Halltown – I chose to model this location as it had the Halltown Paper Company. This neat, compact industry is composed of two tracks that handle boxcars of paper products and tank cars of chemicals.

Ranson – This is the connection with the Charles Town Belt Line which the B&O had joint rights with the N&W Railway to serve various customers and make interchange. I added a 2 car Team Track and a short section of the Belt Line to use as a 4 car interchange track.

Charles Town – During the summer of 1975 while in college, I built an 12" by 60" layout loosely based upon John Allen's Time Saver switching layout so I could run trains in my dorm room (instead of studying or partying). That switching layout has moved with me over the years and has been incorporated into every home layout I've built. It loosely represents the prototype and has a 10 car passing siding for switching and train meets. Most of the industries modeled actually existed during my era. A switcher and caboose are assigned here. It also has a train order office.

N&W Rwy Crossing – I installed a 90° diamond and added two CPL signals that I saved from the West End layout. I'll wire them so that they will display "Stop" or "Clear" indications, depending on the occupancy of the diamond. The N&W track will not be actively used, just an active part of the scenery.

Summit – I modeled this location by installing a phone box and a station sign. This will come in handy when defining train order limits.

Stephenson – Like Millville, I re-used and modified a two track coal loading facility (also with two double ended storage tracks) salvaged from my West End layout. This represents the WS Frey Lime and Stone Company and uses boxcars, covered hoppers and regular hopper cars. There is also a two track pulpwood loading facility (Arnold Pulpwood

Company) that is a holdover from the West End layout and is purely fictitious.

CV Jct. – this is a one track, six car interchange with the PRR.

Winchester – my references for the track arrangement were the article on John King's Shenandoah SD layout in *Model Railroad Planning 2005*, B&O/CSX track charts and B&O valuation maps. Industries modeled are: Winchester Cold Storage (two parallel tracks), Green Chemical, B&O Freight House with a crane and an unloading pit, Southern States Coop, Winchester Milling, Grocers Wholesale, WH Snyder & Sons Coal Co., American Oil/Standard Oil/Texaco (all on one track), Co-Operative Fruit Exchange, Stock Pens, and the B&O Scale (modified Walthers kit). A switcher with a caboose and a two unit set of road switchers with caboose is stationed here. It also has a train order office.

W&W Jct. - this is a one track, six car interchange with the W&W RR.

Middletown – I modeled The Conner Packing Company (stock cars) and the Gallady Supply (box cars) with opposite facing turnouts. The local has to stop twice to switch this station. It also has a train order office.

Strasburg Jct. – due to space limitations, I could not model the wye, which was disappointing. However, I did fit in a six car passing siding, a three car Team Track and a three car interchange track with the Southern Railway. The end of the B&O main track connects to a track in the staging yard to form a continuous run connection.

The track is all laid, the wiring is complete, even some of the scenery and buildings have been done. Where do we go from here? Run trains, of course! Part 3 will cover the development of the operating scheme, making a timetable/train lineup and how it compares to running on the old West End.

Signals, I Just Couldn't Resist

I could not stay away from them. I kept two of the many signals I had on my West End layout for use at the B&O-N&W crossing which is located in Charles Town WV. The picture shows CV Jct. Local (with an extra caboose up front to aid in switching) clomping across the diamond as it heads west toward Stephenson. The signals are "approach lit" - they come on from dark when the train enters the block (about 3/4 train length) on either side of the signals. The signals will only display "Clear" or "Stop" as they just govern movements over the diamond. N&W signals are to be added. The rest of the layout is operated by timetable/trainorder with 5 train order offices located over the layout (see straight line map). Here are the tech specs:

Integrated Signal Systems:

2 - signals
1 - circuit board to drive the signals red/green
1 - circuit board to turn the white marker light on (Clear) and off (Stop)
DCC Specialties (Tony's Train Exchange)
3 - "Block Watchers" to provide detection at the diamond and the two approach blocks.

I highly recommend the Block Watchers as they work extremely well, are easy to install, not expensive (\$22-\$24 each) and have some neat features that can be programmed with a throttle.

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